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**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of

**An Allocation of Spectrum for the
Private Mobile Radio Services**

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RM-9267

COMMENTS IN OPPOSITION

Submitted by:

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May 28, 1998

TO: The Commission

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SUMMARY

These comments are filed in opposition to the rule-making requested in RM-9267 -- specifically as to the frequencies requested at 420-430 MHz and 440-450 MHz -- for the following reasons:

1. The note by Congressional conferees which forms the basis on which the request is made does not carry the force of law and should not be seen as a license for one private wireless service to "raid" frequencies currently used by another private wireless service, as such actions are self-defeating and do not accomplish the goal set forth by the conferees.
2. While the U.S. government holds the current primary allocation on the 70-centimeter band (420-450 MHz), amateur radio has long held a secondary allocation, and 70 centimeters is the second most-heavily used amateur band in the VHF/UHF spectrum. There is a multimillion dollar installed base of equipment -- all paid for entirely by individuals -- that would be rendered useless if this band was to be reallocated; and emergency/government agencies that currently benefit from the communications capabilities of this equipment would lose that benefit.
3. Current amateur activities on 70 centimeters cannot easily be accommodated elsewhere, and reallocating this spectrum from government to private use on a primary basis will severely limit the government's ability to make prompt and efficient use of these frequencies if the need arises in a national emergency.
4. Sharing between Private Mobile Radio Service (PMRS) and the Amateur service would be impractical if not impossible. Conflicting purposes, traditions and operating practices of the two services make sharing incompatible. This would inevitably result in PMRS users exercising the rights of primary allocation-holders to severely limit or eliminate conflicting usage by secondary users.

INTRODUCTION

My name is Richard S. Moseson. I reside at 19 Linden Avenue, Bloomfield, New Jersey. I am licensee of amateur station W2VU and hold an Amateur Extra class operator license. I am an active user of the 420-450 MHz (70-centimeter) band. I have held an amateur license since 1970, and am employed as Editor of *CQ VHF* magazine, a monthly journal devoted to amateur radio above 50 MHz. While these are my personal comments, my employment is relevant because it provides me with a broad view of amateur activity in the VHF/UHF spectrum.

My comments in this matter are limited to that portion of RM-9762 which seeks the immediate reallocation of 420-430 MHz and 440-450 MHz from the Federal government to the Private Mobile Radio Service (PMRS). While the Federal government holds the primary allocation in this band, the amateur service has long held a secondary allocation here and has very successfully shared this band with the government. The 70-centimeter band has become the second most-heavily used VHF/UHF amateur band, and

reassignment of the primary allocation from the Federal government to the PMRS will cause great hardship for tens of thousands (if not hundreds of thousands) of amateur radio operators.

DISCUSSION

A Flawed Basis for the Petition

1. The Land Mobile Communications Council (LMCC), in its *Petition*, begins by stating that its filing is made "in response to the report of the House and Senate Budget Act conferees, which directed the Commission to consider the need to allocate spectrum for the private wireless services, and the report of the Spectrum Planning and Policy Advisory Committee on Federal Government Spectrum Relocation Implementation, which supported the shared use of government spectrum with non-government entities."¹ In its Executive Summary, the LMCC quotes the following from conference committee report accompanying the Balanced Budget Act of 1997: "[T]he conferees expect the Commission and the NTIA to consider the need to allocate additional spectrum for shared or exclusive use by private wireless services in a timely manner."²

2. While the Report accompanying a piece of legislation is a valuable indicator of Congressional intent in passing the legislation, it does not carry the force of law and should not be treated as such. That notwithstanding, one should not assume that the conferees intended their comment to provide the rationale for one private wireless service to attempt to "raid" frequencies currently used by another private wireless service. Yet that is precisely what LMCC is attempting to do in the instant petition. While the Federal government holds the primary *allocation* on 420-450 MHz, the primary *occupant* of the spectrum, based on band usage, is the Amateur service. For reasons I will discuss below, sharing between PMRS and the Amateur service on these frequencies will be impractical, so the net result of granting this portion of LMCC's petition will be to take 20 MHz of spectrum away from one private wireless service (the Amateur service) in order to meet the claimed needs of another private wireless service (PMRS). This in no way meets the Congressional intent of providing private wireless services overall with access to more frequencies currently allocated for government use.

3. Using the Spectrum Planning and Policy Advisory Committee's recommendations as a basis for this petition is fallacious as well. While I have not read the report itself, I have no reason to doubt the LMCC's conclusion that it "supported the shared use of government spectrum with non-government entities."³ The 70-centimeter band is a prime example of successful sharing of government spectrum by non-government users -- the government does what it needs to on the band and the amateurs work around the government uses. Reallocating this band from government/shared with non-government to purely non-government status will do nothing to advance the recommendations of the Spectrum Planning and Policy Advisory Committee. In fact, it will work to the detriment of those recommendations.

¹ Instant Petition, paragraph 1.

² op. Cit., Executive Summary

³ op. Cit., Note 1

4. It should be noted that the intent of Congress in promoting reallocation of government frequencies, as I understand it, is that many of these frequencies have fallen into disuse as the government shifts to a greater reliance on satellite communications. First of all, the recent failure of the Galaxy IV satellite demonstrates the need for essential government services to have immediate access to "traditional" radio frequencies as backups in case of catastrophic satellite failure. Secondly, the 70-centimeter band has in no way fallen into disuse. LMCC itself points out in its petition that the military is using this band as part of its system to detect incoming missiles⁴ and that NOAA (the National Oceanic and Atmospheric Administration) is building Wind Profiler radars at 449 MHz. These are radar systems to detect wind shear near airports in order to reduce the number of air crashes on takeoff or landing caused by this phenomenon. "Ideally," says LMCC, "this should be discouraged or at least minimized ... if reallocation to PMRS is considered."⁵ If I understand the instant petition correctly, LMCC believes the Commission should give greater priority to the needs of taxicab companies, railroads and oil companies, than to protecting American citizens from possible nuclear attack and protecting airline passengers from dying in low-altitude crashes. This would not be good policy.

Impact on Installed User Base

5. LMCC differentiates PMRS users from carriers in the Commercial Mobile Radio Services (CMRS) by pointing out that "PMRS licensees do not operate their systems as a source of revenue but rather as a means of supporting the day-to-day needs of their businesses to protect the safety of their employees, customers, and the general public, and to effectively compete in a global market place."⁶ While it is true that the use of radio communications by most PMRS licensees is incidental to their main businesses, the use of radio communications is often an essential part of a business's ability to succeed commercially. For example, members of the Central Station Alarm Association and the International Taxicab and Livery Association (two LMCC member organizations) almost certainly depend on radio communication to operate profitably. Radio is an essential part of their business. As such, when a business that uses PMRS invests in new radio equipment, the cost is a legitimate business expense which may be taken as a deduction on that company's income taxes and which may be indirectly recovered from the business's customers through the fees, etc., charged for providing its primary products/services. Even non-commercial PMRS users, such as public safety agencies, generally are government agencies or government-supported agencies which may pass along their costs to the public through taxation. One of LMCC's primary reasons for requesting reallocation of 420-430 and 440-450 MHz is that equipment designed for the 450-512 MHz PMRS bands can easily be retuned to operate there, thus avoiding a significant financial impact on current PMRS users.⁷ No consideration is given to the financial impact on Amateur service users who would be displaced by a grant of the LMCC petition.

⁴ op. Cit., paragraph 70

⁵ op. Cit., paragraph 71

⁶ op. Cit., paragraph 45

⁷ op. Cit., paragraph 72

6. The Commission defines Amateur radio as "a voluntary, noncommercial communication service" with a particular focus on "providing emergency communications."⁸ An amateur's equipment is purchased, maintained and operated at his own expense. There is no tax write-off, no pass-through to customers. All expenses associated with purchasing, building, and operating an amateur station come out of the personal pocket of each licensee. Yet this personal equipment (and the communications expertise of the operator) is regularly made available as needed to local, state and federal governments, *at no cost to taxpayers*, in the event of natural disaster or other emergencies.

7. The vast majority of the 700,000-plus licensed radio amateurs in the United States are licensed to operate on the 70-centimeter band (all except holders of Novice class licenses) and, as noted above, it is the second-most-popular VHF/UHF amateur band in the U.S., behind only the 2-meter (144-148 MHz) band. In fact, the most popular type of VHF/UHF mobile or handheld amateur gear on the market today is "dual-band" equipment, which operates on both 144-148 MHz and at least some portion of the 420-450 MHz band (generally either 430-450, 438-450 or 440-450). There are thousands and thousands of these radios in use today, representing a collective investment of millions and millions of dollars. Removing the 70-centimeter band from the Amateur service will make single-band radios worthless, and will greatly reduce the usefulness and the resale value of dual-band radios. Again, the loss could not be "written off" on taxes or otherwise passed along to anyone else. So, even if other frequencies elsewhere were offered to amateurs "in exchange" for 420-430 and 440-450 (as proposed by LMCC in its Petition⁹), it would take many years to rebuild the vast equipment base that is currently in place among amateurs, as individuals would be forced to save for new gear to replace that which was made worthless by the whim of the LMCC.

8. The same situation applies to radio clubs and emergency service groups as well, only moreso, as repeaters and associated equipment are much more expensive than end-user radios. The 70-centimeter band is home not only to more than 6500 "repeaters," or automatic relay stations that greatly expand a user's mobile coverage area, but also to countless auxiliary "link" stations used for remote control of 2-meter repeaters, cross-linking between repeaters in a linked network, etc. In addition, digital "packet radio" *backbone* links (long-haul system-to-system connections) are often found on 70 centimeters. It is fair to say that much of the nationwide network of amateur radio repeaters (including many 2-meter repeaters)-- both voice and digital -- is so highly dependent on access to the 70-centimeter band that removing this allocation from the amateur service will cripple its ability to provide reliable emergency and public service communications -- one of its primary reasons for existence. Just as the 450-512 MHz band is considered the "work horse" band of PMRS¹⁰, so, too, is 420-450 MHz the "work horse" band of VHF/UHF amateur radio. The overall economic impact of losing this band, not only to individual amateurs, but also to organizations and communities

⁸ 47 CFR 97.1(a)

⁹ LMCC proposes granting amateurs 10 MHz of spectrum, at 1390-1395 / 1427-1432 MHz "to offset the constriction" caused by reallocating 420-430 and 440-450 MHz. -- Instant petition, paragraph 78.

¹⁰ *op Cit.*, Instant petition, paragraphs 29, 32

dependent on amateur radio for emergency and public service communications, would be incalculable.

Restrictions on Amateur Activities and Government Flexibility

9. Many of the amateur activities currently conducted on the 70-centimeter band cannot easily be accommodated elsewhere. This is the lowest-frequency band offering sufficient bandwidth to permit full-bandwidth amateur television (ATV), and this is the primary amateur activity in the 420-430-MHz segment. While ATV is admittedly not among the most popular of amateur activities, its use is growing, especially with the increased miniaturization of equipment and the growing recognition of its value in emergency and public service communications. ATV is often a central feature of amateur radio weather-balloon flights, which are often conducted in conjunction with school groups and which permit student-designed experiments to fly to "near-space." Part of the excitement of these flights for schoolchildren is the ability -- via ATV -- to look down on the earth, or out to the horizon, from an altitude of 80,000 feet. Taking away the primary ATV frequencies will cripple these growth areas in amateur radio, and in helping promote technology education beyond computer keyboards in our schools. Even if the LMCC proposal to create a new amateur band in the 1.4-GHz range with two 5-MHz segments is accepted, this band would be useless for ATV, as a full-bandwidth television signal is 6 MHz wide.

10. On the topic of ATV, LMCC's assertion its petition "would benefit amateurs pursuing such applications as compressed video television in the 430-440 MHz band"¹¹ is pure hogwash. First of all, suggesting that amateurs would benefit by losing spectrum is simply ridiculous; and secondly, this petition is the first I have ever heard of "amateurs pursuing such applications as compressed video television in the 430-440 MHz band" -- or anywhere else, for that matter (with the possible exception of single-frame slow-scan TV, which is hardly a new technology and is commonly used on the HF bands).

11. Furthermore, LMCC's assertion that "the 430-440 MHz sub-band is more important to the amateurs for use in emerging technologies such as links with spacecraft and amateur television applications"¹² is totally without merit. While the worldwide amateur satellite allocation at 435-438 MHz is certainly of great importance to amateurs, and any reallocation of that segment could have worldwide effects, there is no way that any one group of amateurs (satellite operators) is more important than any other group (repeater operators), or that any one segment of a given amateur frequency band is more important than any other. It is ironic that LMCC should single out the importance of ATV applications in its petition, as the instant proposal would *virtually wipe out* ATV on 70 centimeters. The one generally-recognized ATV channel in the 430-440 MHz segment is centered at 439.250 MHz. Acceptance of the LMCC petition would put any full-bandwidth ATV carrier on 439.250 MHz outside the upper edge of the band at 440 MHz. With worldwide Earth-Moon-Earth (EME) and other so-called "weak-signal" operation centered at 432 MHz, and the 435-438 MHz satellite subband, there would be no room

¹¹ op. Cit., paragraph 73

¹² *ibid.*

whatsoever at 430-440 for any ATV signals, except single-frame slow-scan. In addition, it would be impossible to accommodate the FM repeaters, links and auxiliary stations that currently occupy (and in metropolitan areas, fill) the 440-450 MHz segment, within 430-440 without completely displacing the weak-signal and satellite operators.

12. Reallocation of 420-430 and 440-450 MHz would not only pose a major crisis for amateur communications, it would sharply limit the flexibility of the federal government in times of national emergency. The current allocations provide "breathing room" for federal needs. In the event of a national emergency, the government could temporarily restrict amateur use of shared bands such as 70 centimeters, or limit use to RACES (the Radio Amateur Civil Emergency Service) and associated emergency groups; but if the band is transferred to private commercial use, such temporary federal use would require inconveniencing, and perhaps crippling, the business users of the frequencies. Due to the financial implications, such temporary use would no longer be an option except in the most dire of emergencies, and the availability of these bands would be lost at precisely the times that they are needed the most.

Sharing With PMRS Will Not Work

13. LMCC proposes retaining the secondary amateur allocation on 420-430 and 440-450 MHz¹³. However, this is impractical and, from reading other parts of instant petition, it is doubtful that continued amateur operation would be permitted in most cases, even if the secondary allocation remained "on the books."

14. By their nature, repeaters (both amateur and PMRS) are fixed-frequency devices. It is impractical, and sometimes impossible, to "move down a couple of kilohertz" to accommodate another user, as is commonly done on the HF amateur bands. In recognition of this, volunteer frequency coordinators have carefully created criteria for both geographic and frequency separation of amateur repeaters. It is impossible in congested areas (the very same areas in which LMCC is most desperate for additional PMRS spectrum) to move one repeater without having a cascading effect on several others, both on adjacent frequencies and in adjacent geographical areas. Attempting to "squeeze" PMRS repeaters in between amateur repeaters simply won't work; and if PMRS has the primary allocation on the band, then the long-established amateur repeaters will have to move (most likely to another band; see financial impact above) or shut down entirely (see impact to the repeater network above). The net result will be that the band will be lost to amateur use in most urban areas of the country, and if there is sufficient interference that results from the occasional "band openings" due to enhancements in the ionosphere or troposphere, then even rural users could be forced to shut down.

15. While repeaters are fixed-frequency devices, individual amateurs have never been limited to specific assigned frequencies within their allocations. While there may be subbands reserved for certain modes or for holders of certain classes of operator licenses, the tradition of amateur radio has always been complete frequency agility within your

¹³ *ibid.*

authorized band segment. In addition, like most other Americans, amateur operators are highly mobile. And when they travel, they often take their mobile radios with them. If there is inconsistency from one metropolitan area to another as to which frequencies within a given band are permitted for amateur use and which are not, then even the most well-meaning and law-abiding amateur will most likely get involved in unintentional "out-of-band" operation while traveling. Given the mobility of amateurs (and most other Americans), it will be very difficult to sustain a shared-frequency arrangement within the 70-centimeter band if the details of what frequencies are and are not available for amateur use vary from location to location.

16. Many PMRS users are used to sharing individual frequencies. This is feasible due to the nature of most PMRS transmissions, which are generally brief and to the point. PMRS users are communicating as a means to an end, generally the efficient conduct of their business. Amateurs, on the other hand (except during emergencies, when they sound as professional as the most professional PMRS user), communicate for the sake of communicating. In fact, this is part of the Commission's own definition of an "amateur" -- a person "interested in radio technique solely with a personal aim and without pecuniary interest."¹⁴ As a result, conversations on amateur repeaters (and on non-repeater frequencies as well) can often be quite long-winded. Plus, the nature of the communication is necessarily *not* business-related. Thus, any attempt to share an individual frequency would be immediately doomed to failure (PMRS users would have to wait too long for a "free channel" and business communications would end up being relayed by amateur repeaters). Net result -- the primary users (PMRS) would insist that the secondary users (amateurs) get out of their way. All of this, of course, presupposes that the LMCC was sincere in its suggestion that amateurs retain their secondary allocation on these frequencies. I am not certain that this is the case.

17. In describing the needs of the PMRS and its users, LMCC uses such terms as "highly reliable communication systems,"¹⁵ and "absolute control over their communications network."¹⁶ There is no disputing the validity of these needs. However, "absolute control" is incompatible with a shared environment. "Absolute control" requires exclusive use of specific frequencies. Sharing, not only with other users in the same service, but with users of another service, does not promote "absolute control" or a "highly reliable communication system." These needs are paramount to PMRS users and will quickly overshadow any attempt, no matter how sincere, to share spectrum between PMRS and the Amateur service.

Conclusion

18. The LMCC petition is nothing more than a frequency grab in what appears to be a desperate attempt to stave off competition to PMRS from the CMRS. The communication needs of business are changing, and the ways in which those needs may be met are changing as well. The LMCC's thinking seems to be that, "if we can get more

¹⁴ op. Cit., 47 CFR 97.3(a)(4)

¹⁵ op. Cit., instant petition, paragraph 61

¹⁶ op. Cit., instant petition, paragraph 57

frequencies and better serve our members, then we'll continue to be relevant." The other side of that coin is very frightening to any organization.

19. The LMCC proposal will cause irreparable harm to the ability of Amateur Radio to provide emergency and public service communications, and will impose significant financial hardships on individual amateur operators and amateur organizations -- making worthless millions of dollars' worth of equipment already in use, and forcing amateurs who wish to continue communications of a similar nature on other frequencies to invest additional millions of dollars in purchasing new equipment. All of these purchases are made entirely through private funds and are not recoverable either through tax deductions or pass-throughs to customers. These financial constraints could result in the inability of amateurs or amateur groups to rebuild on other frequencies the communication networks they have established over the years on 70 centimeters.

20. The pretense under which instant petition is filed -- to increase the amount of government spectrum available for non-government use -- is false and invalid, both because of continuing government use of this band for essential safety services, and because the band is already being successfully shared with non-government, private-wireless, users, the Amateur Radio Service. Reallocating two-thirds of the 70-centimeter band to PMRS would destroy this successful sharing relationship in the name of enhancing it.

21. For all of the above reasons, I respectfully urge the Commission to dismiss the Petition of the Land Mobile Communication Council, at least with respect to the portion of said petition that proposes reallocating 420-430 MHz and 440-450 MHz to the Private Mobile Radio Service.

Respectfully submitted,



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